US005567038A

United States Patent [19]

Lary

[11] Patent Number: 5,567,038

[45] Date of Patent: Oct. 22, 1996

[54] **CAP WITH REMOVABLE FLUORESCENT LIGHT**

[76] Inventor: **Banning G. Lary**, 6370 SW. 87th Ter., Miami, Fla. 33143

[21] Appl. No.: **402,860**

[22] Filed: **Mar. 13, 1995**

[51] **Int. Cl.**[6] **F21L 15/14**

[52] **U.S. Cl.** **362/106**; 362/396; 362/191; 362/293; 362/260; 2/209.13; 2/175.1; 2/906

[58] **Field of Search** 362/105, 106, 362/396, 190, 191, 293, 260; 2/209.13, 175.1, 906

[56] **References Cited**

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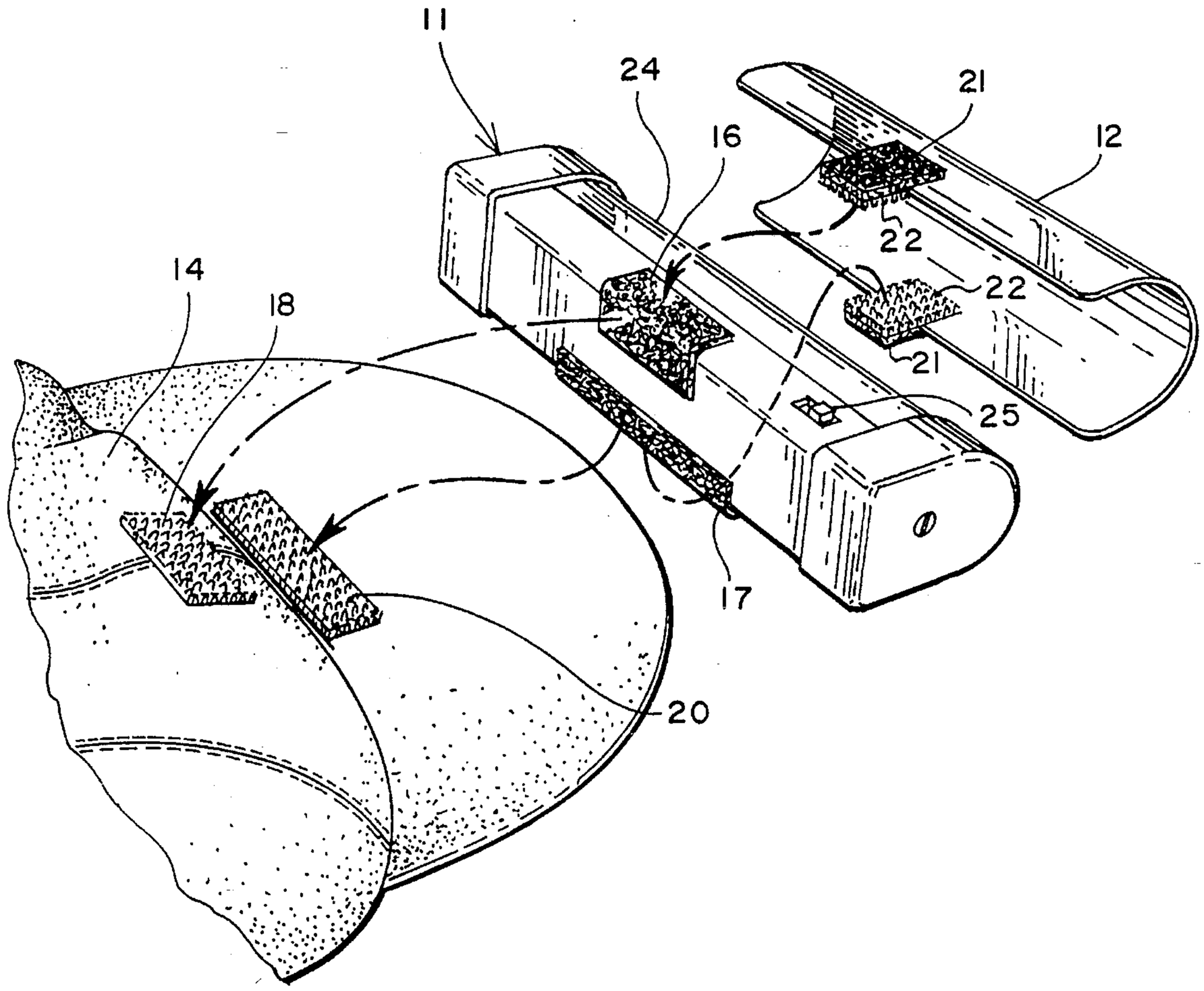
Primary Examiner—Denise L. Gromada
Assistant Examiner—Sara Sachie Raab
Attorney, Agent, or Firm—Michael E. Klicpera

[57] **ABSTRACT**

The present invention pertains, generally, to the lighting of darkened areas. More particularly, it pertains to a light removably affixed to a cap worn on the head which permits the wearer to see and perform functions in the dark with both hands free. More particularly, it is a fluorescent light on a cap which light is detachable for placement to another site.

6 Claims, 1 Drawing Sheet



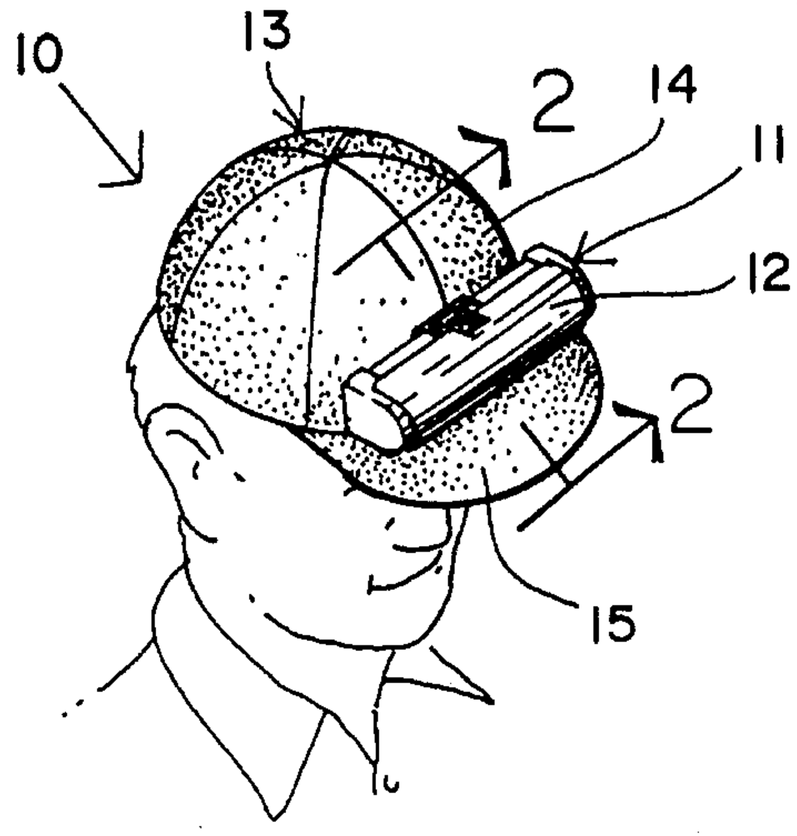


FIG. 1

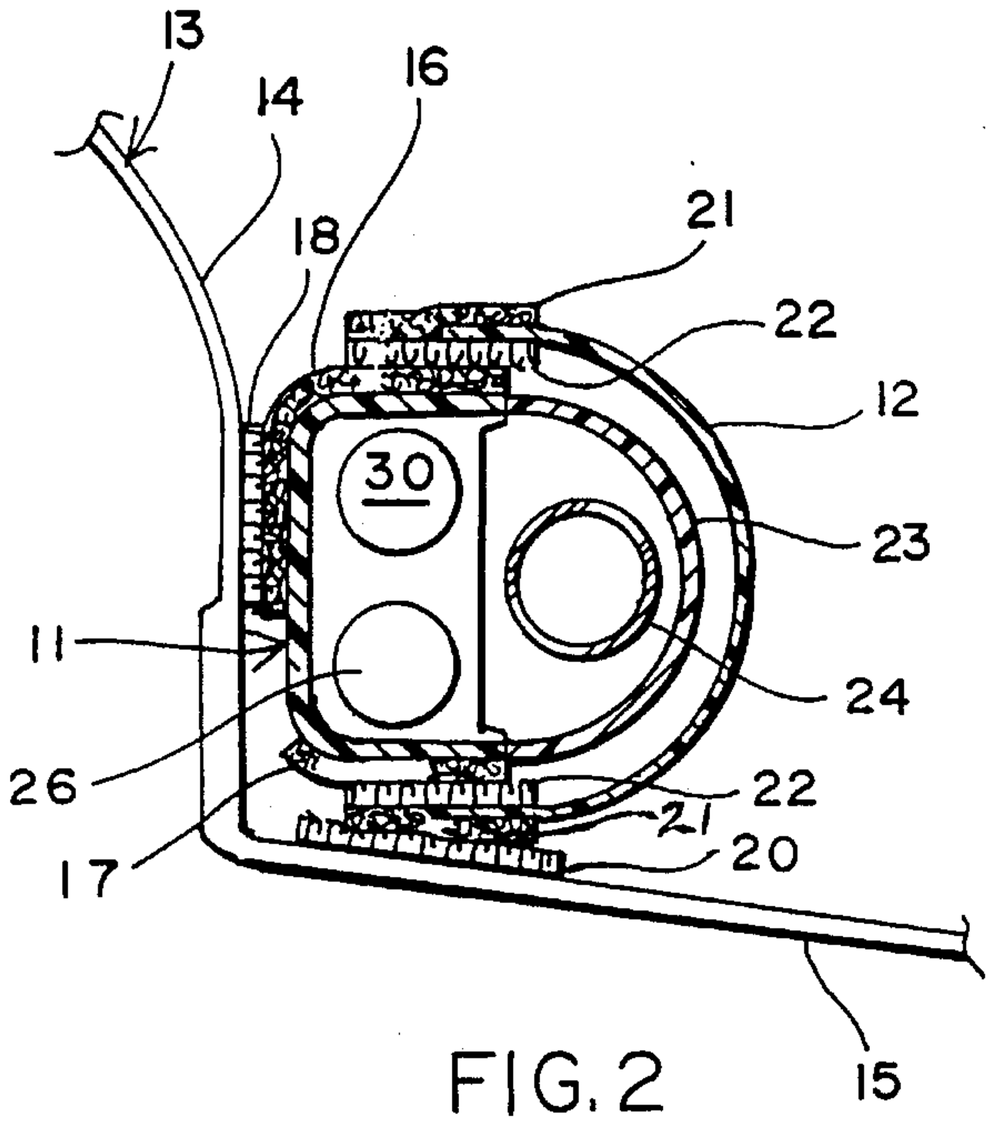


FIG. 2

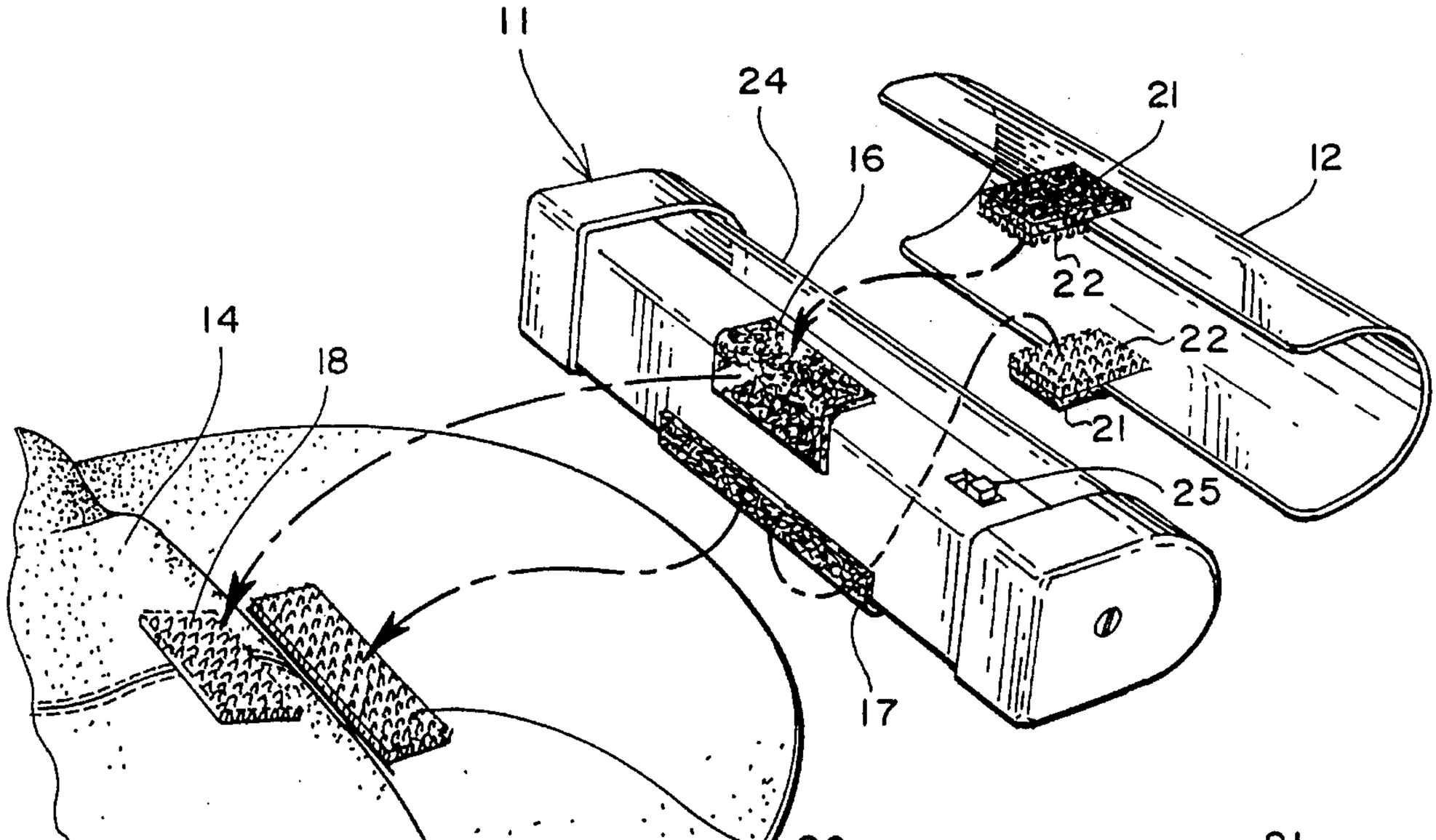


FIG. 3

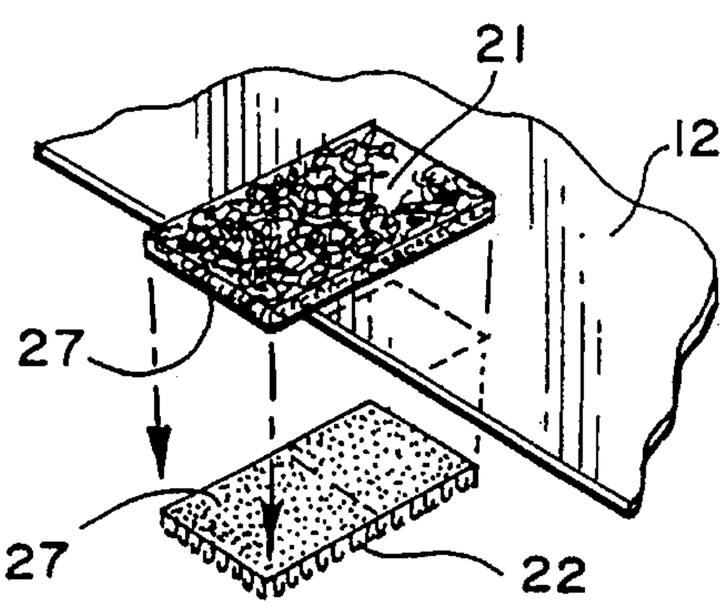


FIG. 4

CAP WITH REMOVABLE FLUORESCENT LIGHT

BACKGROUND OF THE INVENTION

The invention relates generally to a light on a cap which illuminates dark areas and permits freedom of both hands and feet to perform various actions with greater efficiency and safety.

Illumination by lighting apparatuses attached to a hat have long been used by mankind to improve his efficiency. Goya, in the 17th Century, placed candles around the hatband to achieve a flickering light which gave an effect he sought to transfer to his paintings. The common miner's hat of the Industrial Revolution made extensive use of the carbide lamp attached to the hat for working in mineral mines and for cave explorations as well. The dry cell battery, the rechargeable, and lithium batteries are currently used in various types of headlights, which are usually spotlights. Such lights are frequently attached to hard hats and to various devices which encircle the head in a band-like fashion. These lights generally have a relatively narrow beam of the flashlight type, which beams can be focused to a given area by a reflector and a focusing lens. This limitation of general illumination of a wide area is characteristic of such headlighting apparatuses. In addition if one wishes to place the light in another location the supporting member must be removed from the subject.

Related applications can be found in the following cross references:

U.S. PATENT DOCUMENTS

3,346,153	10/67	Galasso
4,406,040	9/83	Cannone
4,593,683	6/86	Blaha
4,991,068	2/91	Mickey

SUMMARY OF THE INVENTION

The current invention utilizes the common baseball-type hat, to which is attached a fluorescent light. It is the object of this invention to provide an efficient lighting apparatus which embodies the principles of an adjustable cap worn on the head, to which a battery-powered fluorescent lighting apparatus is attached by the hook and loop concept. The fluorescent light requires a smaller amount of electrical current and illuminates a larger area with a softer light than the customary headlight.

The design of the apparatus permits diverse tasks to be easily performed, and increases the safety of all movements in the dark. It is particularly advantageous to pilots of aircraft and engineers to illuminate instrument panels in emergency situations when darkness prevails. Applications can be found anyplace a light is beneficial for convenience and pleasure.

It is further the object of this invention to permit easy removal of the fluorescent light for illumination in a stand-alone mode or with an additional attachment mechanism. A further object of the invention is to permit the attachment of various semi-transparent lens covers to change the color and/or decrease the intensity of the illumination. For example, a red plastic transparent lens cover may be attached to prevent loss of night vision. A further object is to permit the light to be elevated for diffuse illumination of a specific area, or concentrated to a smaller area closer to the

operator, such as when examining a specific object or reading.

BRIEF DESCRIPTION OF DRAWINGS

FIG. **1** illustrates the apparatus **10** consisting of an adjustable cap **13** with a removal fluorescent light fixture **11**, to which may be attached a transparent plastic shield **12**. The light is attached to the crown **14** and bill **15** of the cap by segments of hooks and loops.

FIG. **2** illustrates the method of removably joining the three major components of the apparatus **10**.

FIG. **3** illustrates in more detail the specific method for attaching each separate and removable member.

FIG. **4** illustrates the method of forming a single member **28** which serves to attach to and remove the shield **12** from the light **11**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The novel features of this invention, as well the invention itself, both as to its structure and its operation, will best be understood by the accompanying drawings, taken in conjunction with the accompanying description in which similar reference characters refer to similar parts, and in which:

FIG. **1** illustrates the device **10** which is an adjustable cap **13**, to which is attached a fluorescent light **11**. A transparent colored shield **12** is removably attached to the body of the light **11**. The light **11** with the affixed shield **12** are attached to a part of the crown **14**, the bill **15** of the cap **13**.

FIG. **2** illustrates in more detail the method for attaching the light **11** to the crown **14** and the bill **15** of the cap **13**. Flexible segments of loops **16** are adhesively attached to part of the top and back of the light **11**. Similarly, additional segments of loops **17** are attached to the bottom of the light **11**.

The loops **16** attach to the hooks **18** sewn to the crown **14** of the hat **13** and the segment of loops **17** attach to the segment of hooks **20** sewn to the bill **15** of the cap **13**.

FIG. **2** also illustrates segments of loops **21** adhesively attached to a portion of the center area of the top of the shield **12**. These loops being of softer consistency then hooks, serve as a convenience in the attachment and detachment if the shield **12** to the body of the light **11**. Directly opposing the loops **21** and attached partially to both the adhesive backing of loops and the shield is found a segment of hooks **22** which engage the segment of loops **16** and **17** on the light **11**.

Further study of FIG. **2** will reveal the segment of loops **16** and **17** engage the segment of hooks **22** and the segment of loops **21** engage the segment of hooks **20**, thus securing the shield **12** to the body of the light **11** and to the bill **15** of the cap **13**. The segment of loops **21** is of small thickness and of limited length, so that it has minimal interference with the attachment of the segment of loops **17** to the segment of hooks **20**. It will be observed that when the subject uses pressure on the light **11** to release the loops **16** from the hooks **18**, the bill **15** of the cap **13** is deflected downward and greater illumination of proximal objects is achieved.

Further illustrated in FIG. **2** it will be observed that the light **11** is composed of a transparent lens **23**, a fluorescent bulb **24**, and batteries **26**

FIG. **3** illustrates the transparent shield **12** with the centrally positioned and opposingly attached segments of loops **21** to hooks **22** at both the top and bottom. Both

segments of hooks are partially attached inside the shield **12** to engage the segment of loops **16** and the segment of loops **17**, while the segment of loops **21** is outside the shield to engage the segment of hooks **20** sewn to the bill **15** of the cap **13**, as demonstrated in FIG. **2**.

FIG. **3** also demonstrates the position of the switch **25**, which is positioned free from the attachment of the shield **12** to the light **11**.

Further illustrated in FIG. **3** is the approximate length of each segment of loops and hooks. It will be noted that the segment of hooks **20** sewn to the bill of the cap **13** is shorter then the segment of loops **17** attached to the light **11**. Similarly, the segment of hooks **18** sewn to the crown of the hat **14** is shorter then the segment of loops **16** attached to the light **11**. Experience has shown that with repeated removal of the light from the cap **13**, separation of the adhesively attached loops from the body of the light may occur unless the segment of hooks is shorter then the segment of loops.

The shield **12** serves to protect the lens **23** of the light **11**. In addition, the transparent shield **12** may contain various colored pigments or other components. An example would be a red pigment which would preserve night vision by protecting the rods and cones of the retina of airplane pilots, yet still provide sufficient illumination with which to read instruments. It could also be used, for example, in film developing enclosures.

FIG. **4** demonstrates the method for partially adhering the segment of hooks **22** to the inside of the shield **12**, and the segment of loops **21** to the outside of the shield **12**, so that a combined member **27** results. This member **27**, as illustrated in FIG. **2** and FIG. **3**, permits the shield **12** to be attached or removed from the light **11**. While the aforegoing

describes the invention in some detail, other variations of the concept would still belong within the scope of the claims.

What is claimed is:

1. A lighting apparatus for illuminating darkness which comprises:

a cap having a crown and a bill;

said cap having a first series of fixedly attached hooks engaged to said crown and said bill; and

a fluorescent lighting device having a second series of fixedly attached hooks which is removably attached to said first series of fixedly attached hooks.

2. The lighting apparatus as defined in claim **1**, further comprising:

a lens cover having a third series of fixedly attached hooks which is removably attached to said first series of fixedly attached hooks.

3. The lighting apparatus as defined in claim **2**, wherein said lens cover may be pigmented red to obstruct certain wave lengths of light.

4. The lighting apparatus as defined in claim **1**, wherein said first series of fixedly attached hooks on said cap are shorter then said second series of fixedly attached hooks on said lighting device.

5. The lighting apparatus as defined in claim **1**, wherein said first series of fixedly attached hooks are mounted to said cap by sewing means.

6. The lighting apparatus as defined in claim **1**, wherein said second series of fixedly attached hooks are mounted to said lighting device by adhesive means.

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